CLAIMS

1. A method of fabricating a porous filter element comprising the steps of: exposing a photosensitive material to an interference pattern of electromagnetic radiation, whereby the exposure through the material varies in accordance with the spatially varying intensity created by the interference; and treating the exposed photosensitive material to selectively remove regions of the material in dependence on the exposure to which that region was subject.

2. A method of fabricating a porous filter element according to claim 1, wherein the interference pattern is created by exposing the material to interfering beams of electromagnetic radiation.

3. A method according to claim 2 wherein at least one of the relative polarization, relative intensity, coherence and angles between the beams are selected in accordance with the desired pattern.

4. A method of fabricating a porous filter element according to claim 2 or 3, wherein the beams of electromagnetic radiation are laser beams.

5. A method of fabricating a porous filter element according to claim 4, wherein three non-coplanar laser beams are used to create the pattern, the three beams having equal intensities.

6. A method according to claim 5 wherein the beams have the following wave vectors and polarization unit vectors relative to conventional f.c.c. unit cells axes:

Normalised optical wave-vectors:

(1)	-0.96225038	-0.19245008	-0.19245008
(2)	-0.19245008	-0.96225038	-0.19245008
(3)	-0.19245008	-0.19245008	-0.96225038

Polarization unit vectors:

(A)	(1)	0.269517	-0.575382	-0.772202
	(2)	0.804841	-0.0425761	-0.591961
	(3)	0.933817	-0.337270	-0.119310
or (B)	(1)	0.0000000	-0.7071068	0.7071068
	(2)	0.7071068	0.0000000	-0.7071068
	(3)	-0.7071068	0.7071068	0.0000000

7. A method of fabricating a porous filter element according to any one of the preceding claims, wherein the regions extend in a straight line from a first side of said photosensitive material to a second, opposite side of said material.

8. A method of fabricating a porous filter element according to any one of the preceding claims, wherein the step of treating the exposed photosensitive material to selectively remove regions thereof comprises removing regions having an exposure below a predetermined level.

9. A method of fabricating a porous filter element according to any one of the preceding claims, wherein the step of treating the exposed photosensitive material to selectively remove regions thereof comprises removing regions having an exposure above a predetermined level.

10. A method of fabricating a porous filter element according to any one of the preceding claims, wherein the pattern is substantially non-varying through the depth of the material whereby said regions have a constant cross-section through the material.

11. A method of fabricating a porous filter element according to any one of claims1 to 9, wherein the pattern varies through the depth of the material to vary the cross-section of said regions through the depth of the material.

12. A method of fabricating a porous filter element according to claim 10 or 11, wherein the pattern repeats across the material perpendicular to the depth direction to create in the material a regular array of identical regions which extend through the depth of the material.

13. A method of fabricating a porous filter element according to any one of the preceding claims, wherein the material is a mixture of an epoxy resin and a photoacid generator.

14. A method of fabricating a porous filter element according to any one of the preceding claims, wherein the material to be exposed is in the form of a thin film.

15. A method of fabricating a porous filter element according to any one of the preceding claims wherein the photosensitive material comprises a plurality of regions of different composition such that the different regions react differently to exposure followed by treatment.

16. A method of fabricating a porous filter element according to claim 15 wherein the regions are layers, one on top of the other.

17. A method of fabricating a porous filter element according to any one of the preceding claims, comprising the further step of using said treated material as a lost mould to form a porous filter element.

18. A method of fabricating a porous filter element according to claim 17, wherein the voids left by said selective removal are at least partly filled with a material from which the filter element is to be formed, and then the exposed and treated photosensitive material is removed.

19. A method of fabricating a porous filter element according to claim 18,

wherein the voids are filled with a ceramic which after introduction into the voids is sintered, said sintering burning off the exposed and treated photosensitive material to leave the ceramic porous.

20. A method according to any one of the preceding claims wherein the exposure time and/or intensity of the e.m. radiation is set selectively in accordance with the desired size of the regions.

21. A porous filter element made by the method of any one of the preceding claims.